

Fire Plan Sketch Manager (FPSM Injector)



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C2PC Users
Conference
3-5 Feb 2004



Agenda

- Fire Plan Sketch /Tactical Data Network
- Functional Requirements
- Environment Model
- Formal Specification
- Design/Implementation
- Use Case Testing
- Prototype Demo (M-DACT and D-DACT)
- Future Work



Fire Plan Sketch

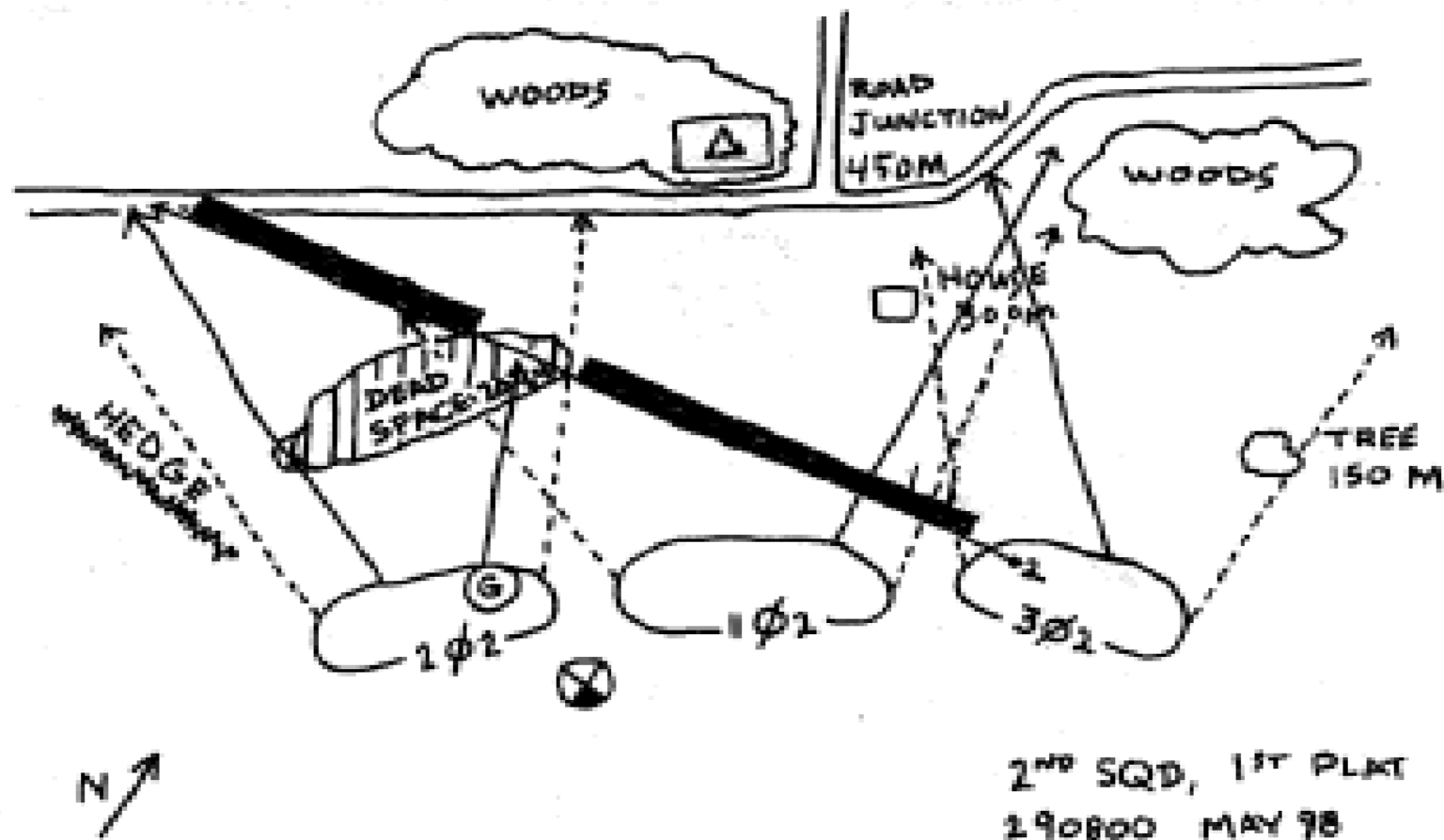
A sketch that depicts the layout of units and (predominantly) direct fire weapons in the defense to ensure proper integration and control of those fires.

Ugly



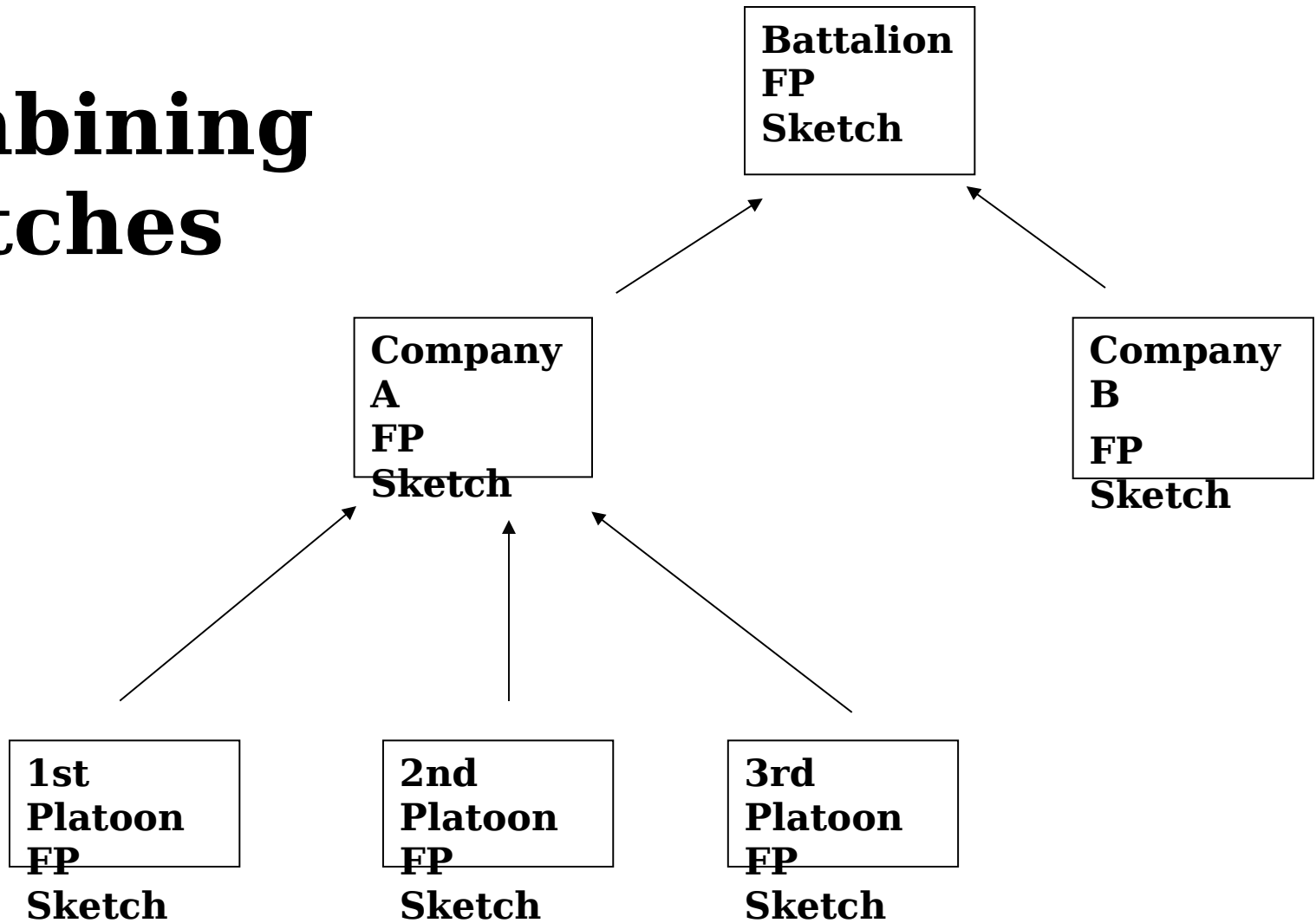
Baby

Squad Fire Plan Sketch





Combining Sketches

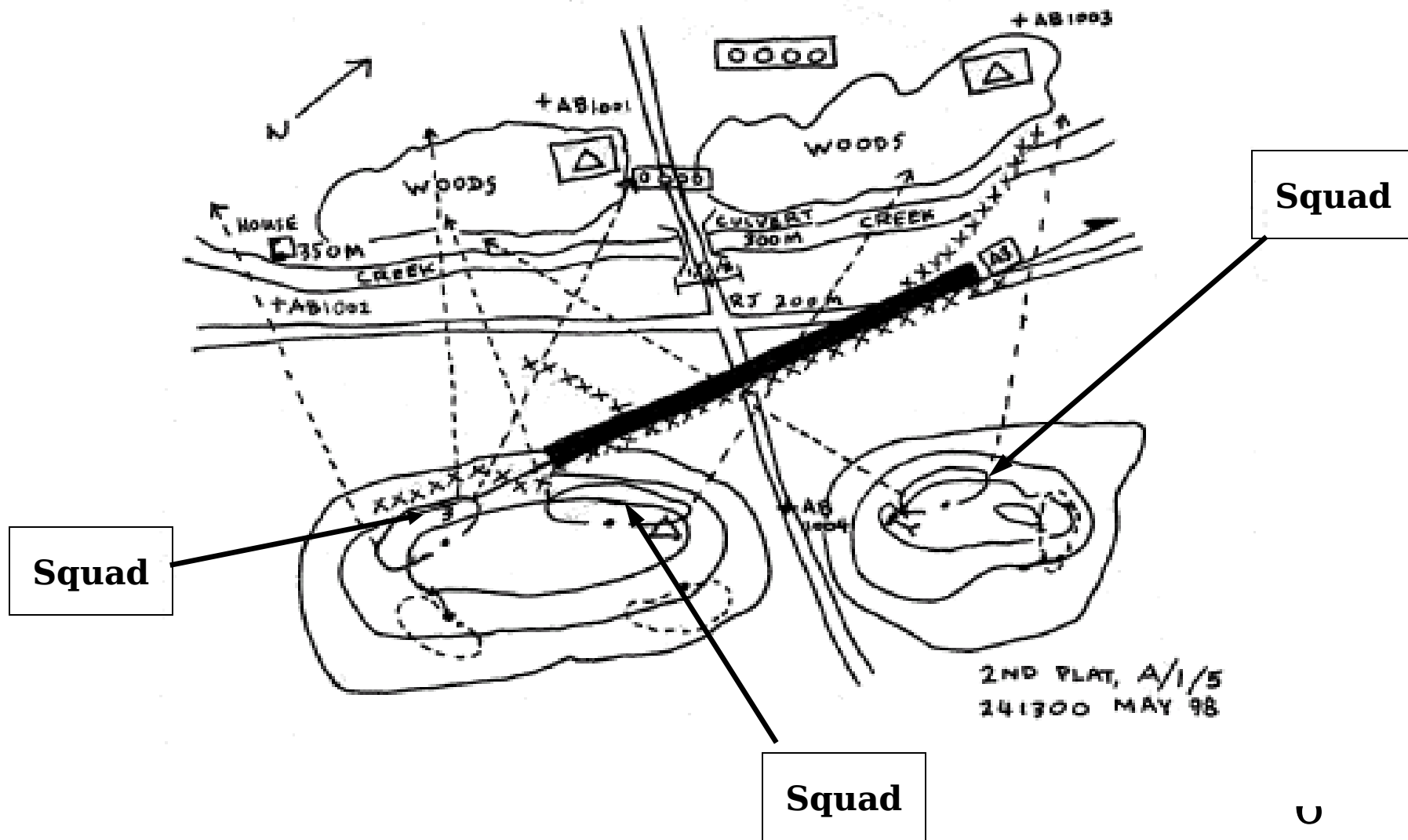


Ugly



Baby

Platoon Fire Plan Sketch

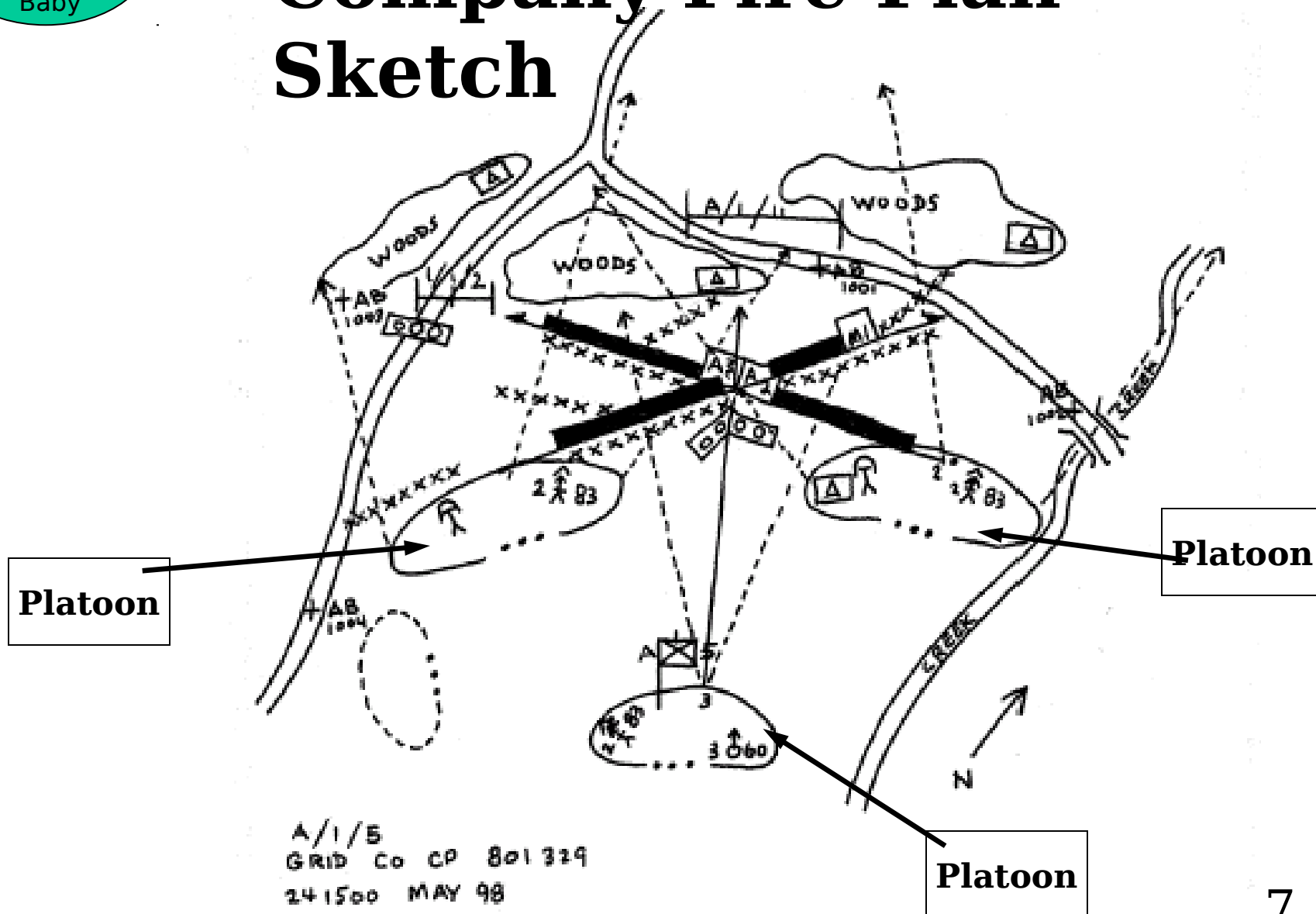


Ugly



Baby

Company Fire Plan Sketch





What the FPSM would replace

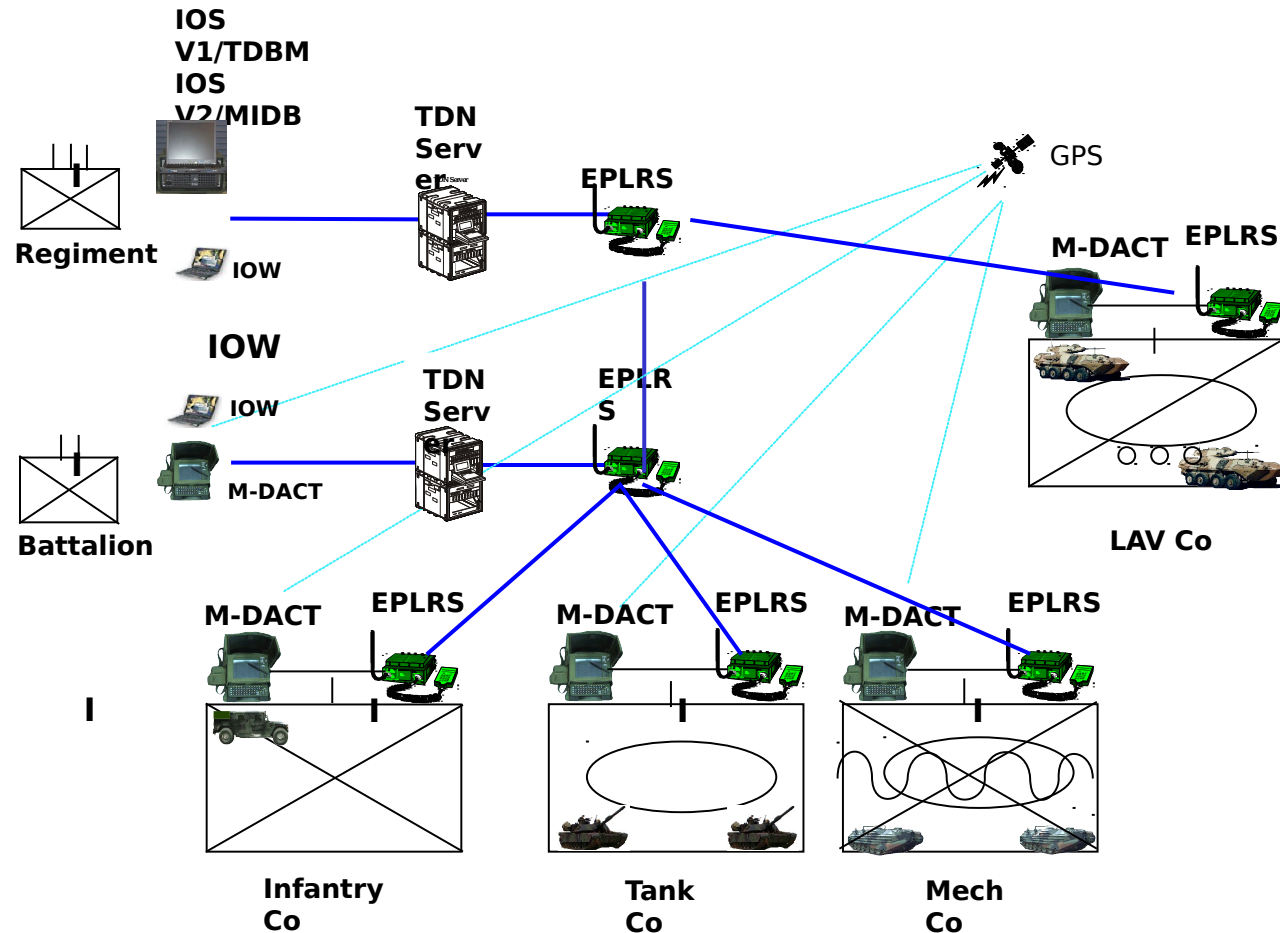
- Fire plan sketches currently drawn by hand with paper and pencil and passed up chain of command by hand.
- Currently no easy way to *create, combine, communicate* sketches



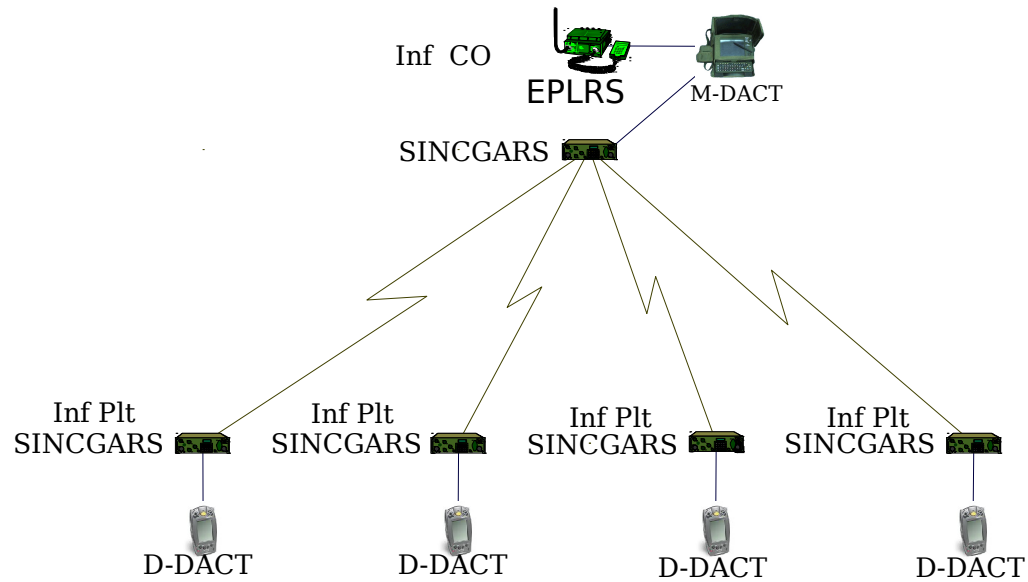
With....

- Digital fire plan sketches, *created, combined, edited and transmitted* electronically
- More importantly, NOT created only by someone sitting at a computer terminal....
- BUT, on the ground by a unit leader with a handheld (D-DACT) utilizing embedded GPS to record unit, weapon, and control measure position and orientation data.
- This functionality cannot be provided by the existing overlay injector...

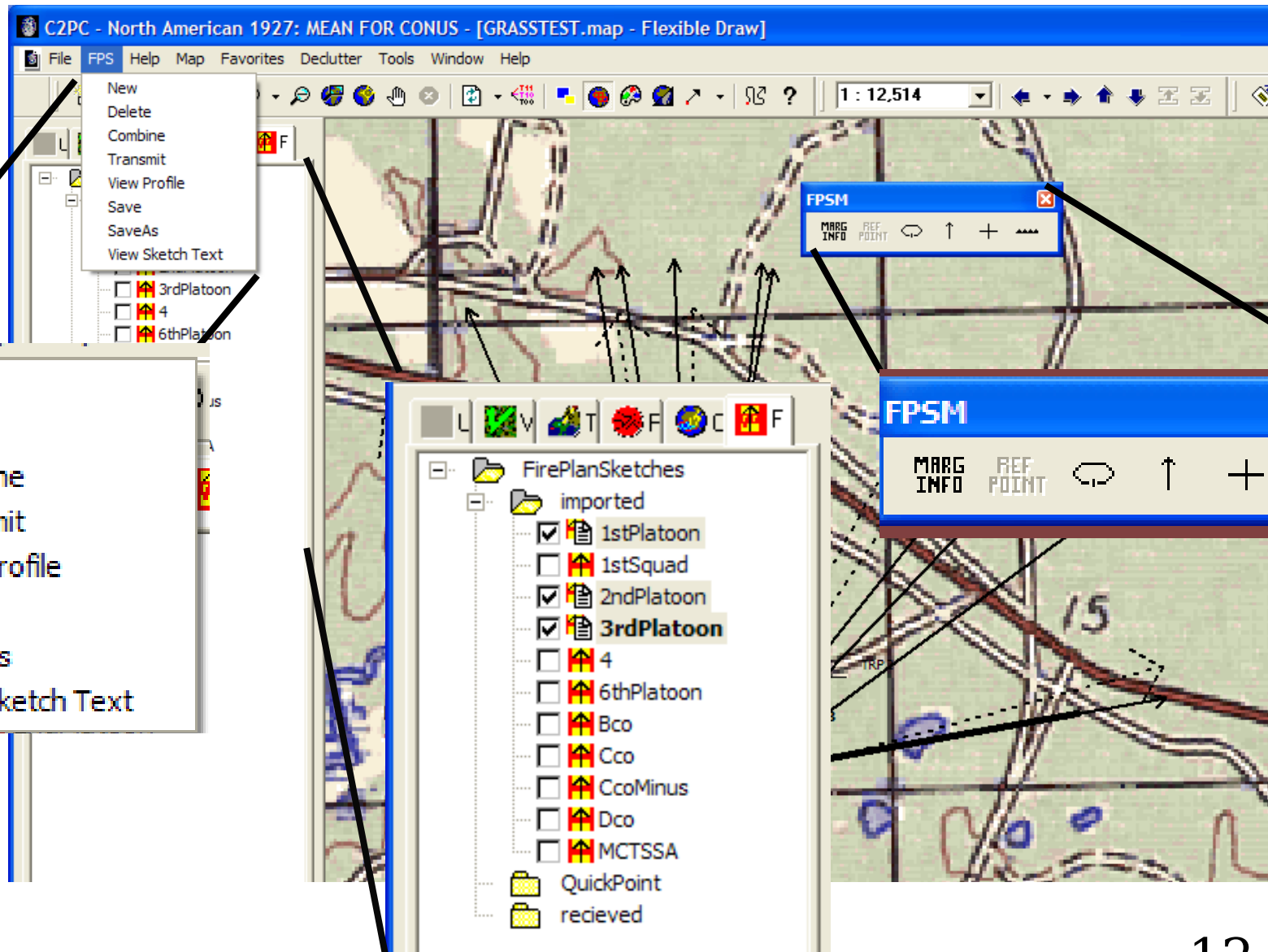
TDN/M-DACT



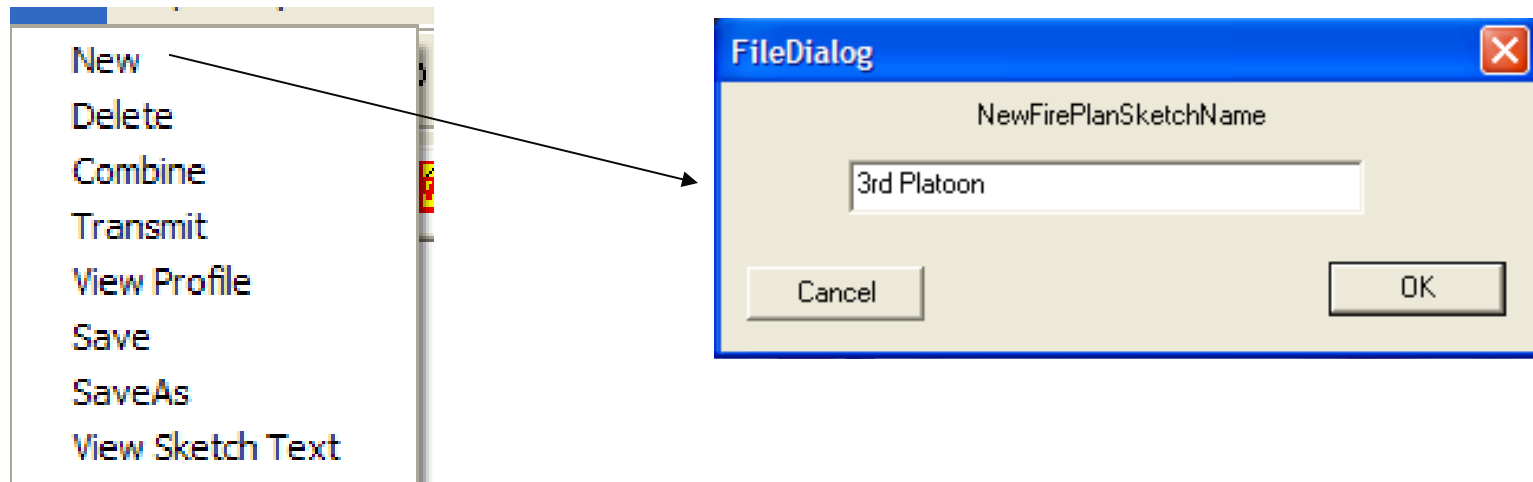
TDN/D-DACT



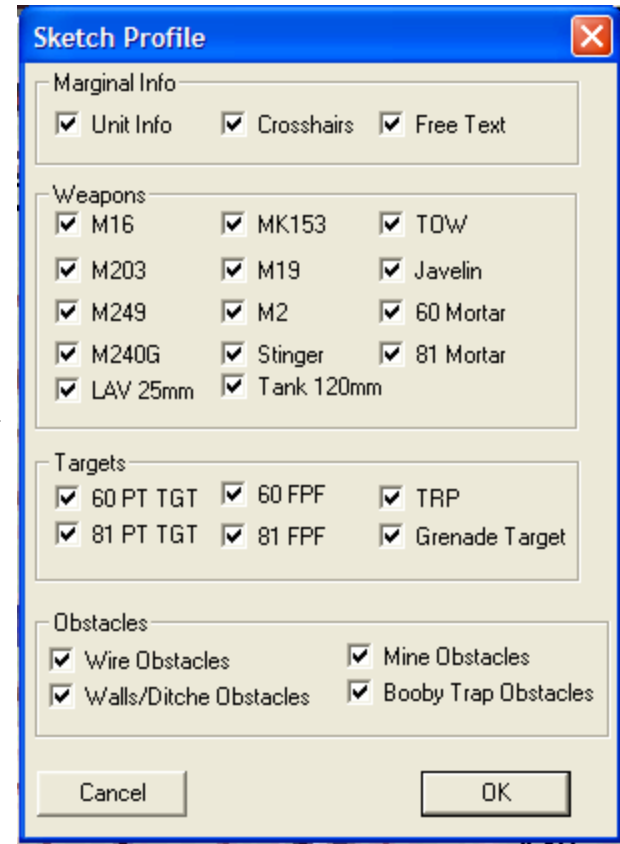
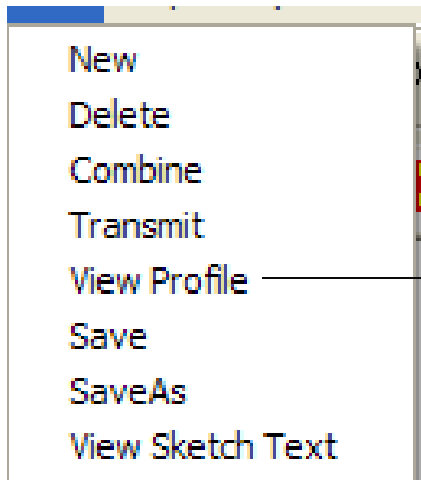
FPSM User Interface



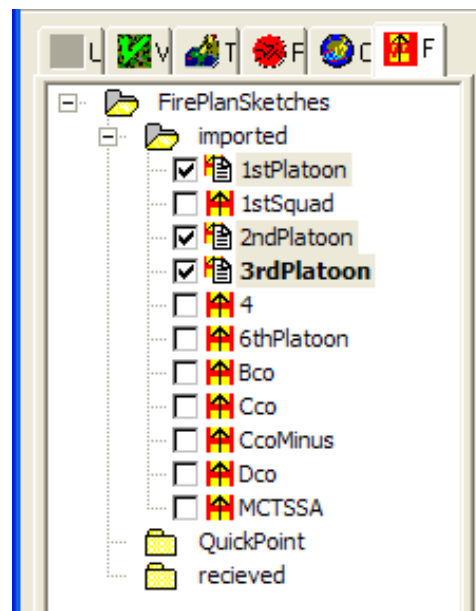
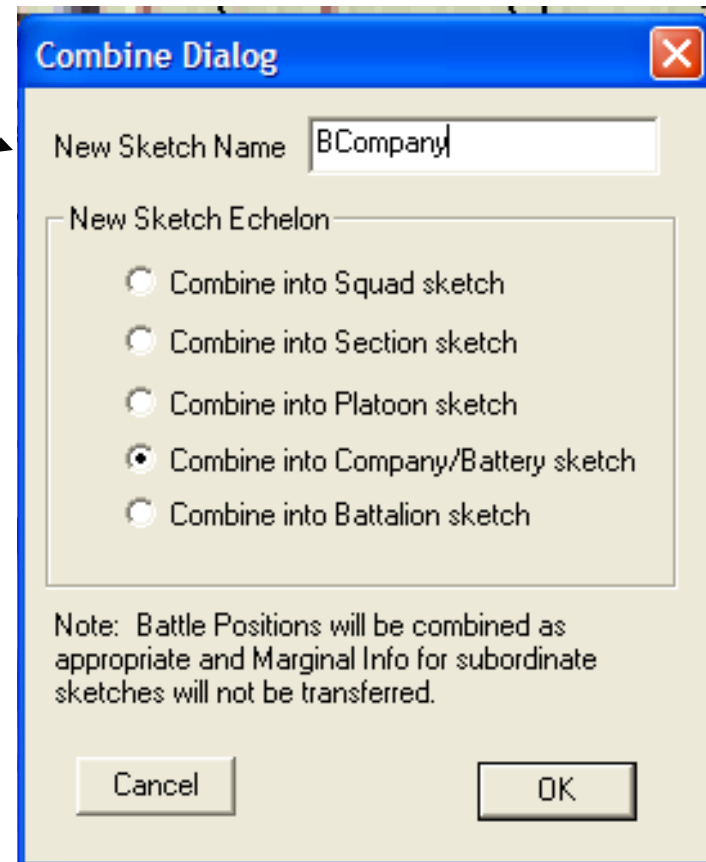
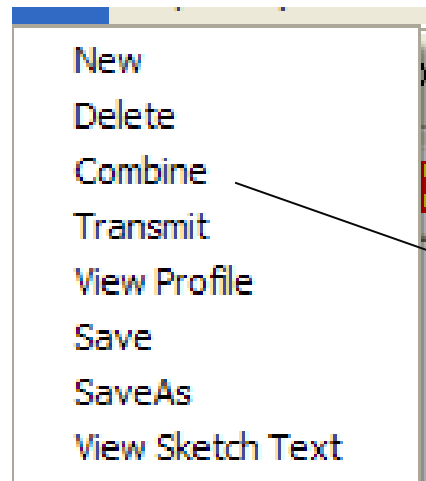
New Sketch



Sketch Profile



Combine

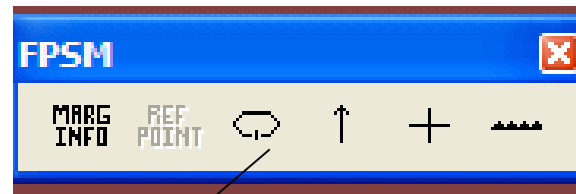


Marginal Info Dialog



The 'Marginal Info' dialog box is shown with a blue title bar and a red close button. It contains three radio buttons: 'Crosshairs', 'Unit Info' (which is selected), and 'Text'. Below these are three sections: 'Crosshair Grids' with a dropdown menu set to '{ZL MM EENN}' and two input fields for 'Crosshair 1' and 'Crosshair 2'; 'Unit Info' with input fields for 'Unit' (containing 'B 1/9'), 'DTG' (containing '162300ZMay03'), and 'CP Mil Grid' (containing '18STP8901427858'), along with a 'GPS' button; and 'Free Text' with a large text area. At the bottom, there is a 'Text or Unit Info Pos' section with an input field containing '18STP8901427858' and a globe icon. The dialog has 'Cancel', 'Delete', and 'OK' buttons at the bottom.

Unit Dialog



Unit Dialog

☒ BP ☐ CP ☐ LP/OP

Echelon: Company/Batter
Unit Type: Infantry

Unit Designator: B 1/9

CP or LP/OP Position
Mil Grid: GPS

BP Position
Left Pos Mil Grid: 18STP8768128264 GPS
Right Pos Mil Grid: 18STP8791928258 GPS

Control Measures (Lateral Limits)
Left Lateral Limit1: 0Mag 1000
Right Lateral Limit2: 60Mag 1000
Add CM Delete CM

Cancel Delete OK

Linear Control Measure

Type
☐ Left Lateral Limit ☒ Principal Direction of Fire
☐ Right Lateral Limit ☐ Final Protective Line

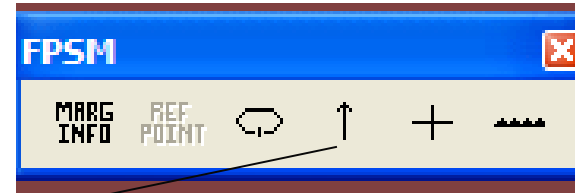
Direction
Mag Azimuth: 10

Range
Change range as effected by terrain: 1100

Grazing Fire
Grazing Fire1: Start: 100End: 200
Grazing Fire2: Start: 700End: 800
Add GF Delete GF

Cancel OK

Weapon Dialog



Linear CM

Weapon Dialog

Weapon Type: M240G Machine Gun

Location (ZL MM E<E<E<E>>>N<N<N<N>>>):
Mil Grid: 18STP8788428233 GPS

Unit - Gun Crew: 2nd Squad
Max Eff Range: 1100

Mobility - Will show vehicle instead of weapon:
☒ GRND ☐ TANK ☐ AAV ☐ HMMWV ☐ LAV

Control Measures:
☒ Linear ☐ Area ☐ SDZ
Principal Direction of Fire1: 55Mag 1100

Add CM Delete CM

Cancel Delete Weapon OK

Linear Control Measure

Type:
☐ Left Lateral Limit ☒ Principal Direction of Fire
☐ Right Lateral Limit ☐ Final Protective Line

Direction:
Mag Azimuth: 10

Range:
Change range as effected by terrain: 1100

Grazing Fire:
Grazing Fire1: Start: 100End: 200
Grazing Fire2: Start: 700End: 800

Add GF Delete GF

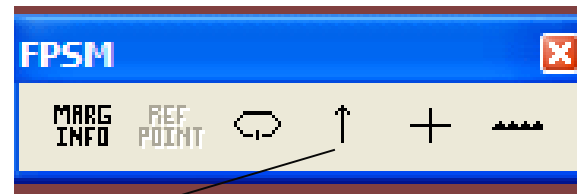
Cancel OK

Grazing Fire

Range:
Start Range: 200
End Range: 400

Cancel Delete OK

Weapon Dialog Area CM



Weapon Dialog

Weapon Type
Stinger Missile

Location [ZL MM E<E<E<E>>>N<N<N<N>>>]
Mil Grid 18STP8772828810 GPS [Globe Icon]

Unit - Gun Crew
1st Team

Max Eff Range
5000

Mobility - Will show vehicle instead of weapon
☒ GRND ☐ TANK ☐ AAV ☐ HMMWV ☐ LAV

Control Measures
☐ Linear ☒ Area ☐ SDZ
Sector1: LL 60 RL 140

Add CM Delete CM

Cancel Delete Weapon OK

Area Control Measure

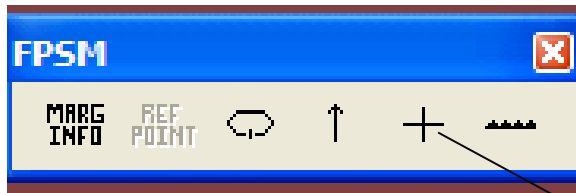
Type
☒ Sector

Range
Inner Range 0
Outer Range 5000

Direction
Azimuth of Left Limit 20
Azimuth of Right Limit 60

Cancel Delete OK

Target Dialog



Target Dialog

Type

☐ 60 mm Point Target ☐ 81 mm Point Target
☐ 60 mm FPF ☐ 81 mm FPF
☒ Target Ref Point ☐ Grenade Target

Designator

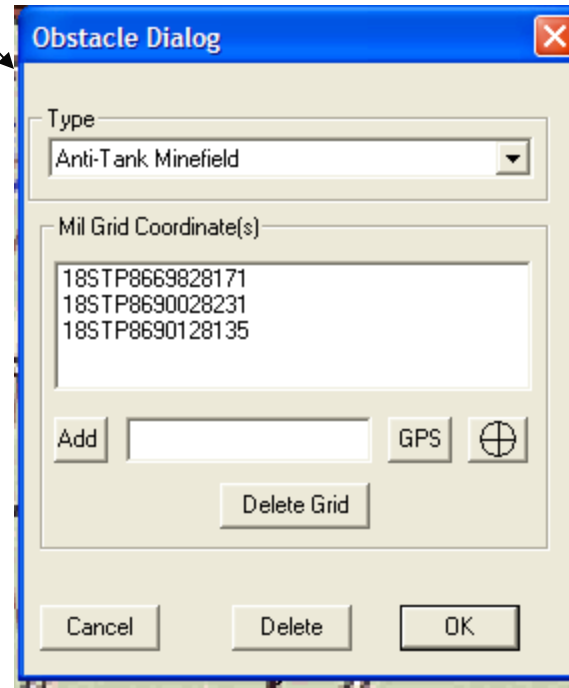
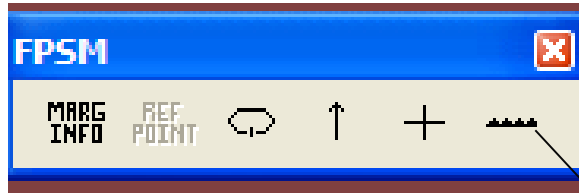
Target Location

Mil Grid

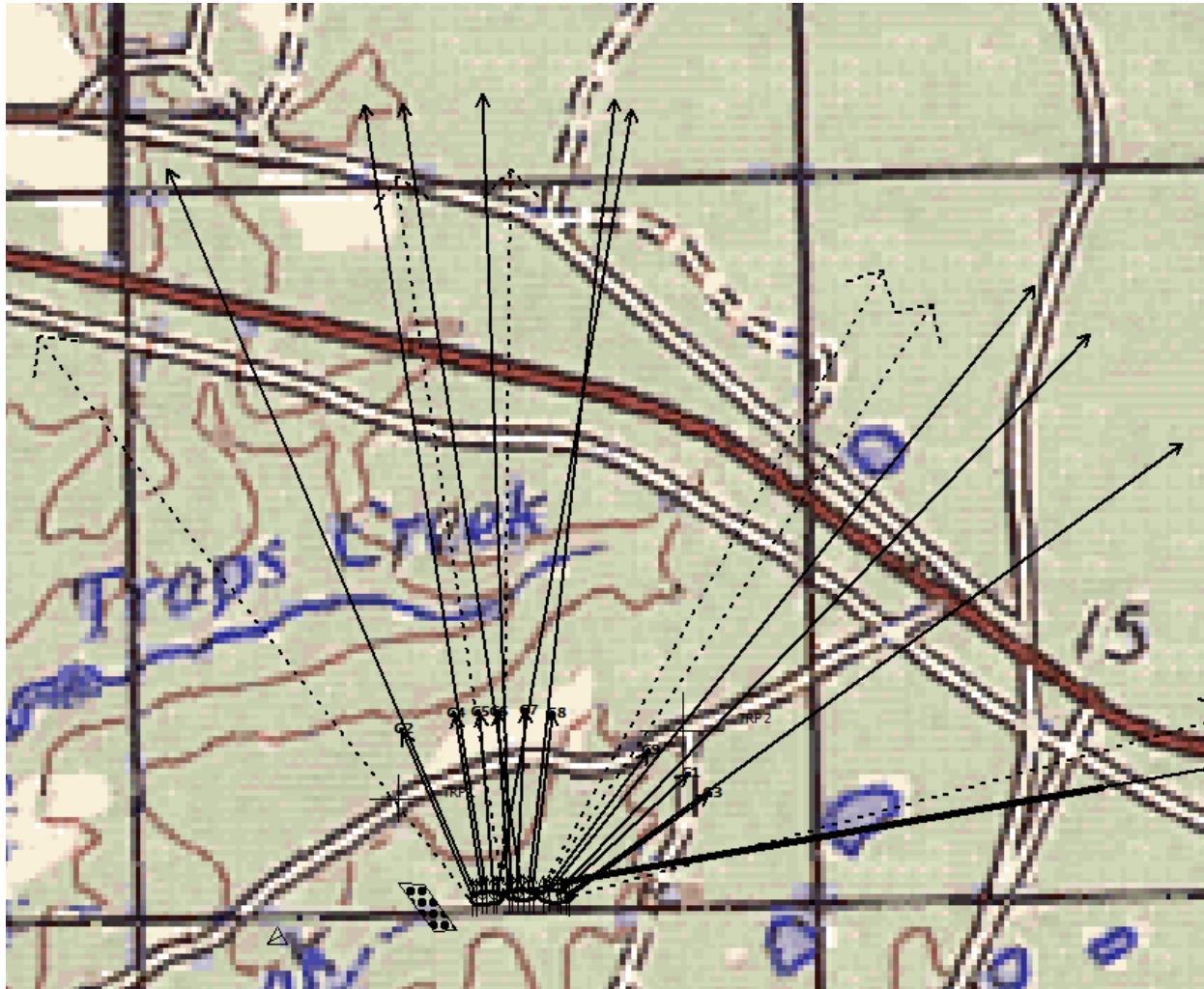
Rectangular Target Data

Length
Width
Attitude

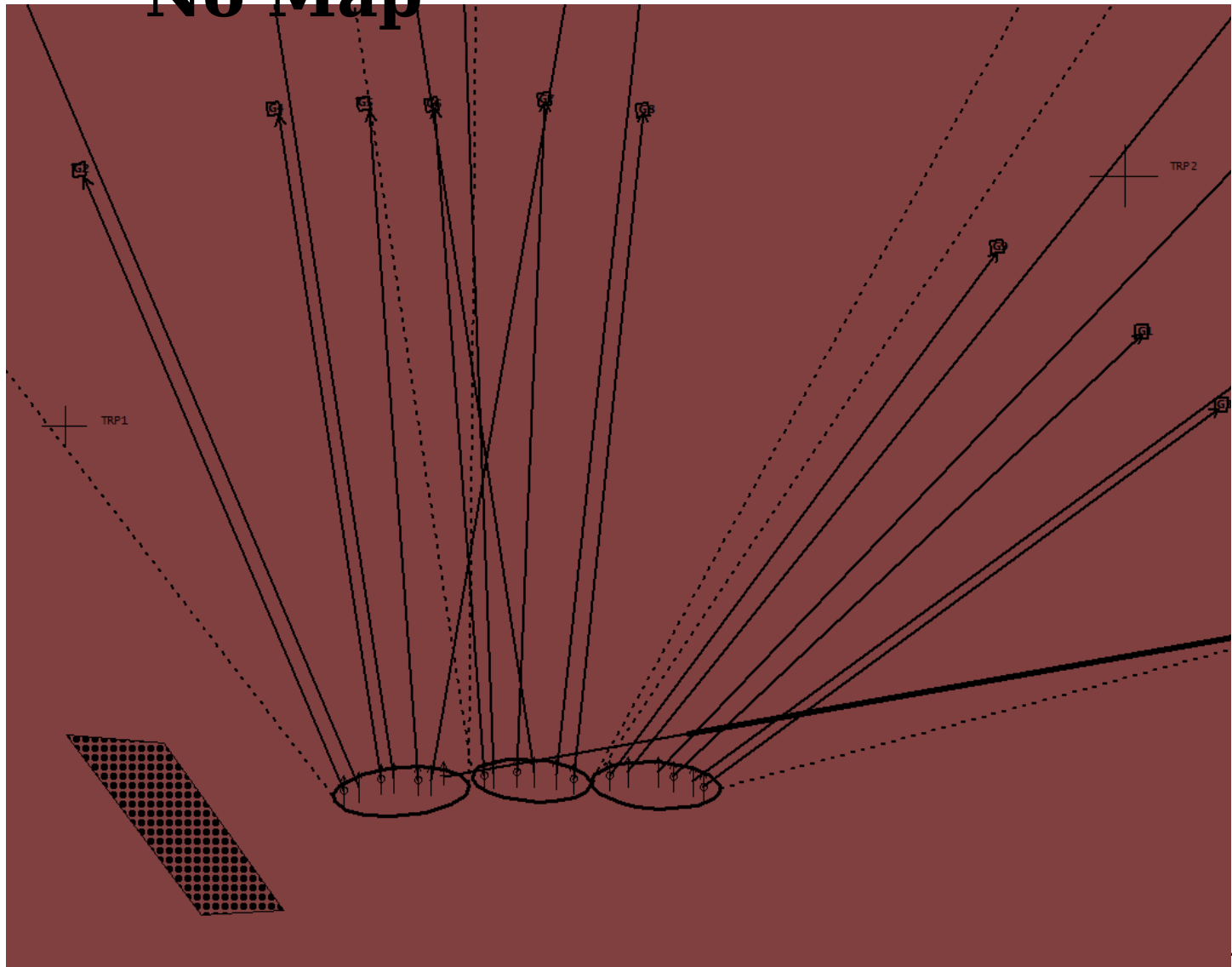
Obstacle Dialog



Platoon Sketch



Platoon Sketch - Detail, No Map



3 Platoon Sketches and Company Minus Sketch



Combined Company Sketch w/ Company View Profile



Bottom Line

- If the Tactical Data Network and the Dismounted DACT/C2CE become a reality, the FPSM will be a useful tool for the Marine Corps that will save time and effort speed the sharing of important defensive information on the battlefield.